Spadacrene Dunelmenſis:

OR A SHORT

TREATISE

Of an Ancient

Syn. 8. 67. 25

MEDICINAL FOUNTAIN

OR

VITRIOLINE SPAW

Near the City of

DURHAM.

TOGETHER

With the Conſtituent Principles, Virtues and Uſe thereof.

By E. W. *Doctor of Phyſick.*

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REVERENDO DOMINO

D^no^ JOHANNI SUDBURIO,

Decano Dunelmenſi

optime merito,

Nec non ampliſſimis ejuſdem congregationis Prebendariis jugiter obſervantia colendiſſimis.

EXpectabunt fortè nonnulli (ampliſſimi Domini) me in hoc proloquio gratiam benevolentiamque veſtram aucupaturum veſtræ laudis (ut moris eſt) encomia texere velle. Patet equidem ampla dicendi materia, ſpatioſus dilatandi Campus, ſed meis ut fateor viribus impar, & veſtris ſane virtutibus ſupervacaneum;

um; altius insonuit virtus vestra quam ut tubis indigeat, clarius eluxit quam ut facem præferam. Est mihi profectò jubilandi simul ac congratulandi sed non pro meritis vestris collaudandi facultas, plus potestis præstatisque opere, quam calamo me decet explicare. Accedo itaque non tanquam aliquid honoris collaturus, sed beneficium postulaturus; ut nimirum jugis hæc nostra acidula agrorum Dunelmensium irrigua, vestro pariter favore ac patrocinio efflorescat. Hoc tantum Enimvero posuit Deus morbum simul ac medelam, illum nobis peperit peccatum, hanc libere profudit mundi piaculum. Jacuissemus alioquin in sordibus iniquitatum, & truculentam adhuc hostium sustinuissemus atrocitatem, nisi παντοδύναμος ἀρχίατρος salutiferum nobis itidem conciliasset medicamentum. Oh immensam amoris flagrantiam, oh

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inauditum pietatis argumentum. Verum enimvero inter tot tantasque rerum creatarum varietates nihil magis cedit in humani generis conservationem, quam fœcundum illud aquarum seminarium: hinc est quod Spiritus Domini ferebatur super aquas, Hæbraicè *Merahepheth* incubabat aquas, ob insignem vitalitatis virtutem à Spiritu Sancto in aquarum procreatione concessam; unde non immerito Chimici jactitant, ab aqua sunt omnia, & in aquam reducuntur omnia. Quapropter (Colendissimi) accipite hunc nostrum libellum votúmque tanquam amoris simul ac debitæ venerationis symbolum, quo plurimos adhuc semper fælicius invicem succedentes annos, & tandem, sero licèt, æternæ fælicitatis gaudium supplicat apprecaturque

Humilimus dominationum
vestrarum servus
ODOARDUS WILSONUS.

THE PREFACE TO THE READER.

AS the powerful Hand of God made all things for the use of man, so was it His Divine will and Pleasure, that he should be compleatly furnished with all such Remedies as principally concern'd the perfect preservation of his health. Hence it is, that all things created have their peculiar Medicinal faculty: Every particular mixt Body, virtually respects

respects one part or other of our humane Bodies, and by a marvellous strange Character points out that which respectively it is appointed to maintain, nay it is as it were with a certain weight carried unto that with which it holds an amical and natural correspondence. And because our human constitution consists of many sulphureous, nitrous, saline, vitrioline, and oleaginous parts, thence it is that Spaw-waters, which perfectly partake of those mixtures, perform such admirable effects upon disaffected Bodies. But some may say, and that truly, that 'tis a great controversie among the Metallascopical Philosophers, whether Metals can truely and properly be mixed with water? To which I say, that the mixture is confusaneous, though not perfect, as appears in Aqua Regia, in which Gold it self is resolved into insensible Atoms, and even ordinary water admits of a virtual mixture at least, as

Expe-

Experience evidenceth in Chalybiate waters. Again, Minerals are not so solid and compact in their subterraneous veins, nor have they their due perfection, but of a more moist, soft, and glebish consistence, so that by a caustick water, or spirituous sulphureous liquor, even the Metalline Spirits are easily separated, and their raments communicated, however a specifick virtue is certainly commixed, and a vigorous propriety at least imbibed. If Metals may be thus incorporated, much more may Minerals, which are only Metals in fieri. And therefore with some probability we may say, that Mineral waters may not only be impregnated with a virtual propriety existing in the Spirits, but also with the very substantial particles of the said Minerals. Now the next, and indeed the chief thing to be enquired into, is the giving an exact account of Mineral waters, since upon this hinge depend

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the whole ſafety of ſuch as drink them. Therefore I ſhall as briefly as may be diſcharge this incumbency. Firſt then, the virtues and properties of theſe waters are known from the mixture of their terreſtrial Glebes and Minerals, and the manner of knowing and diſtinguiſhing them is twofold; the firſt depends meerly on the ſenſes, the other (which Philoſophers call à poſteriori) is gathered from the recrements which their channels leave behind them. Now there is an innate faculty in the nature of Man, to know things ex evidenter apparentibus & ſenſibilibus, and therefore the eſſence or ſubſtance of Mineral waters are to be known, how they are differenced in their qualities from ſimple waters, by their colour, taſte, ſmell, and ſometimes quality of touch. Theſe virtues, thus diſtinguiſhed, are either elementary, and ſuch as perform their operations by the firſt qualities of hot, cold, moiſt, and dry; or ſpecifick,

ſuch

such as some call heavenly, as far surpassing both the power of all elements, and much transcending the reach of our senses, being such in their effects, as leave nothing less than wonders in our understanding; which unintelligible virtue, if it exert it self in any mixt body, it's principally observable in Spaws; neither is there any Fountain that is not favourably breathed with some Divine Rays, and affected with some singular and peculiar good, the finding out of which, is so much more difficult, as the closet of their causes is inaccessible. This infinity of variety congeminates difficulties, in so much that Nature enthrones her self in no mixt body so gloriously as in this her Paranymphs *Kingdom; witness those innumerable different* species *of waters, which are so many as there are different* species *of terrestrial Glebes, Minerals, Metals, liquid and concrete Juyces, which as they exceed Arithmetick,*

metick, ſo likewiſe do the waters partaking of them, eſpecially if the ſeveral combinations with their ſeveral mixtures be daly conſidered. Hence it is that Seneca, lib. 3. nat. quæſt. de Aquis, Ad rem inquit ſeriam, gravem, immenſam acceſſimus, ſuſtinemus & opus neſcio an ſuperabile, &c. *And* Pliny, lib. 31. cap. 1. Plurimas aquarum vires differentiaſque conſpicatus cunctas, exclamat, quis mortalium enumerare queat? *Some honeſt Philoſophers have been affrighted hereat, becauſe an infinity cannot be fathom'd; others taking heart have ſaid, that* miſcellæ quibus aquæ tinguntur & prædominium qualitatum, ſenſuum officio experimentorumque poſſunt quidem (etiamſi difficultate) comperiri. *Yet notwithſtanding all theſe difficulties,* Non ita deterremur *(ſaith that Object of the worlds wonder,* Kircherus,) ut proinde nobis haſtam abjiciendi animus ſit;

sit; est aliquid prodire tenus, si non datur ultra. *Let us wish therefore we had* Pliny's fontem Leontinum cujus aquas qui bibisset scientem evadere medicum recitat, *and being arm'd with this phantastical conceit, take upon us to tell you, that all waters are either mixed with different Glebes of terrestrial matter, wherein we comprehend all species of Earth, or with the different sorts of Salts which are called concrete Juyces, and so there will be as many different species of waters, as there are different sorts of Salts; or they are adjoyned to the different species of liquid juyces, such as are unctuous and fat as Bitumen, or not unctuous; as are all strong caustick waters; or they are mixed with the Metalline Bodies, and so invest themselves with the same nature they are ting'd withall; or lastly they are imbodied with divers kinds of stony Semimalities, such as that at Knarsborough,*

rough. Out of the manifold complication of all which, ariſeth that admirable variety of waters, which if you conjugate according to the principles of Art combinatory, there will be according to renowned Kircher, 479001600 different ſpecies, that is, four hundred ſeventy nine millions one thouſand and ſix hundred ſorts of waters. Let none therefore wonder, if we be not dogmatically poſitive in our Aſſertions concerning the Virtues of waters, ſince no leſs than an approach to infinity can determin the various complications of Mineral, Metalline, and Saline Principles, with which theſe are impowred; yet ſo far as ſenſata experientia and natural Philoſophy, which is an experimental Chymiſtry and mechanical knowledge of things, can carry us, we may ſafely believe, as one well obſervas, Spagyria ſola eſt ſpeculum veri intellectus, monſtratque tangere & videre veritatem. I ſhall not therefore

go

ge about to obumbrate the Truth under the veil of obscure Appellations, nor attach other Mens Reasonings of weakness, nor sing Matins and Evening-song to my own voice, by a sort of big and exotique expressions, calling, with Basilius Valentinus, Hippocrates's Ignis and Aqua, Gladiatores and Asa and Phalaia; nor with Paracelsus, shrouding the same Instruments of Nature under the names of divers Spirits, Spiritus alter trahit, alter protrudit, idem autem uterque facit; nor with Helmont, stiling the animal, vital, and natural Spirits of the Ancients by that bugbear name of Archæus, which can be nothing else but the most fine, volatile, and Ætherial parts of the Blood, contained in the Veins, Nerves, and Arteries. But I shall endeavour clearly and sagrically to demonstrate the true Principles and Constituents of this our Spaw in our following Discourse. Soli illi docen-

qui

qui per causas & principia docent. *In the interim, for more clearness sake, I shall set down (since the first qualities give us but an uncertain and conjectural rule of finding out the true Essences of waters) a threefold manner of proceeding, for discovering in general the genuine and true mixtures of all Medicinal waters.*

I. The first is by Concoction, thus:

Take a glass vessel, or an earthen one glazed, and boil therein your Mineral water, 'till a third part be wasted, afterwards let it settle well for three days space for separating its Fæces, *then take a gross thick Cloth fit for filtration, and shape it in the form of an inverted Pyramis, hang the pointed pyramidal end in the water, and let the other extremity first being moistened hang down without the vessel; and it will come to pass, that the moistened end hanging without the vessel, shall draw the water in the*

other extremity of the filter, which was plung'd in the water, and thus by little and little all the water, and only the pure water, shall be drawn out, the sediment remaining, which being expos'd to the Sun, you may thence discover the mixture of the Minerals.

II. The second way of judging Mineral mixtures in Spaw waters is by evaporation, thus:

Take a glass vessel with a large orifice, place it midway deep in another earthen vessel full of sand, and evaporate all the moisture, and dry the sediment or Fæces *in the Sun, and you shall know the mixtures by the diversity of the Mineral particles; the difficulty of this way of trial is, that together with the water the Mineral Spirits flye away, which happeneth not in the former nor in this following way of proceeding.*

III. The third, and indeed the securest way, of finding out the nature of Mi-

Mineral waters is by distillation, because hereby not only the grosser particles of every Mineral, but even the predominant spirits and vaporous are infallibly made known, and it is thus:

Prepare a furnace with vent-holes, and place therein a proper earthen vessel full of sand, in this sand another vessel filled with water up to the middle, v. g. a Cucurbita, *or glass still bottom, with a prety strait mouth, to this* Cucurbita *you must fit a* Capitellum *with a nose or an alembick rostrated, being well luted that nothing can expire, and to this nose of your* Capitellum *you must adapt another* Fistula, *or glass pipe, well luted, which pipe must run through a wooden vessel full of cold water, this done, put fire to your furnace, and draw off all the water, and what remains of sediment expose to the Sun to be dryed; which done, for dissolving the several species of the Minerals proceed thus: Expose the sediment upon a polish'd Iron*

Table red hot, and being mixed with water the Chalk, Marble, and Gypsum *or Plaister will not be burnt, but after all the others are burnt, they will remain more shining white than formerly, the* Gypsum *presently, but the Chalk and Marble require more time. If there be Brimstone, it discovers it self by its accustomed strong sent; Salt and Niter sparkle, Salt with crackling but Niter without any. If Ceruss be there, it is turn'd into an intense redness, an evident sign of Lead; Allum being melted turns white like Milk, and Vitriol darkly reddish like Coleothar; and this effect had the sediment of this our Spaw-water, without any sulphureous smell at all; the* Fæces *whereof I gathered both by Coction and Distillation, but less remained of* Fæces *by Evaporation, an evident sign of the spirituous subtilty of the Mineral mixture.*

Now as to the discovery of Metalline tin-

tinctures in waters, they are known by their proper excrements and corruption of their ſediments, therefore the manner of proceeding is thus:

If Metal be in waters, infuſe the ſediment of the Metalline water in ſome Chymical corroſive water, or in ſome generouſly ſharp Vinegar, and if you ſee an Ironiſh ruſt upon the ſediment, you may be ſure of the mixture of Iron with the water; and ſo of Braſs, Gold, and all others.

Thus have I given ſome Remarques in general, and hinted only by the by at my greateſt concern, the Conſtituents of our Spaw, of which hereafter; I ſhall now only beg pardon, if I make an uſeful, though as to my preſent intention ſomewhat impertiment digreſſion.

Raimundus Lullius *tells us of an Apparition he had, of* Madam Nature's *weeping unto him, for Mens endeavouring to diſcover her Secrets, and proſtitute them to the hands of her Ene-*

mies, meaning the Illiterate. And Beguinus *gives advice, and makes it his requeſt, that Phyſitians would not acquaint Mountebanks, and bold Intruders into the Practice of Phyſick, with his Antimonial Preparations,* Ab uſu (*ſays he*) horum ut illegitimorum ſe abſtineant. *And that great Chymiſt* Libavius, *as well as Galeniſt, complains of that fatal liberty in the Profeſſion of Phyſick,* Illud Cavendum (*ſays he*) ne audaculi imperiti in medicando id adhibeant quod eſt medicorum circumſpectiſſimorum exercitatiſſimorumque, veluti ſi eſſentia ex ſublimato & regulo fiat &c. tu qui imperitus es methodi medendi & impudens, nec tibi, nec aliis horum permitte uſum cum temeritate. Nam nobiles medicinæ in manu temerarii hominis ſunt ut culter vel fax ardens in manu pueri aut dementis. "*And doubtleſs* (*ſaith*) "*Dr.* Caſtle) *as there is more danger*

"*that*

"that a Child may do miſchief with a "knife of ſteel rather than with one of "bone; ſo the hazard that Men run of "their lives in taking Chymical Re-"medies at the hands of Empericks, is "much the greater, by how much the "Preparations which they uſe are of "more force and virtue And upon this occaſion, it will be no grand preſumption (good Reader) eſpecially being back'd by authority and truth, to tell you of the ſtrange and ſhameleſs impudency that a great many, Fanaticks eſpecially, aſſume in the Practice of Phyſick, holding all Learning unneceſſary, and Latin *the Language of the Beaſt. Univerſities (ſay they) teach nothing but jejune, notional, and chymerical Conceptions, and their Licenſe* ad practicandum *ſignifies no more than a ſet form of Prayer does in Devotions. Thus they trample all Learning under foot, and ſet no greater eſtimate upon Philoſophy, than ſome make conſcience in killing one by inſpi-*

ration; whilst they by their mysterious and enigmatical canting, hard words, and God knows what unintelligible, and indeed nonsensical expressions, draw their poor Patients, the vulgar Rabble especially, into an admiration of their high parts and knowledge in Physick. Thus they steal though illegally into practice, and cunningly pick Mens purses with applause and satisfaction. This promiscuous toleration sharpen'd Dr. Castle's *Pen, telling us, That our Nation is of late grown so fond of Enthusiasticks in Physick as they are of those in Divinity, and ignorance among some Men is become as necessary a qualification for the practice of Physick, as it is for Preaching.* "*I cannot believe* (*says he*) *that the delight which* "*the Vulgar* (*nay and some wise Men*) "*take in being cheated by Quacks and* "*Mountebanks, proceeds from any* "*principle in Nature which inclines* "*them to it, but rather think it to be* "*caused*

"caused from Impostors being more indu-
"strious in deluding the world, than
"the true Artists are in undeserving it.
And indeed this growing evil, in re-
jecting the method of the Ancients,
and best endeavours (after a strict exa-
mination at the Universities) of gra-
duate Physitians, and following the
whimsies and follies of some phantasti-
cal Pseudo-Chymists, *is like the A-*
mericans, *who barter Gold and Silver*
for Beads and Glass. To this purpose I
could instance, but am not desirous to
make any personal reflection, in a par-
ticular passage here in Durham, *of*
one who very seriously said he was a
beguifted Apothecary: *I imagin he*
is the same now in Physick and Chyrur-
gery; haud aliquid in ullo. *But of*
this no more, only give me leave to
tell such precarious Practitioners, that
their petulancy is too sawcy, in presu-
ming so magisterially to direct in Cases
where life and death are so nearly con-
cern'd,

cern'd, *especially when as neither Learning nor Reading, nor lawful Authority gives any encouragement thereunto.* 'Tis not *sufficient for a conscientious Physitian, to know Receipts, how to purge, vomit, or sweat, neither is it only requisit, that he understand the nature and force of the Remedy, but likewise the constitution and strength of the Patient, and the nature, times, and motion of the Disease, it being certain, that the same Remedy in the same Disease, which advantagiously may be given to day, may perniciously destroy to morrow. Therefore let me admonish thee, good Reader, not to credit too much those touchy headed Chymists, who pretend to* Panacæa's, *Universal Medicines, Secrets, and such like whimsical Remedies, but let their* Materia Medica *be wholly founded upon Experience,* Crebro singularium tentamine, *by a frequent tryal of each Medicine: And this was the opinion of the learned*

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Varandæus *to Dr.* Primroſe, *telling him, that thoſe Remedies are the beſt which are no ſecrets but beſt known, as being confirmed by more certain experience, conſidering that credulity is in no Art of ſo dangerous a conſequence as in Phyſick. And therefore the learned Mr.* Boyle, *in his* Sceptical Chymiſt, *warns us not be forward in believing Chymical Experiments;* "*For (ſays he) as the obſcurity* "*of what ſome Writers deliver makes* "*it difficult to be underſtood, ſo the un-* "*faithfulneſs of too many others makes* "*it unfit to be relied on. What circumſpection ought therefore to be uſed in managing the Cure of a Diſeaſe? when the leaſt inadvertency or errour in judgment, coſts many Men no leſs than the price of their lives. And to this purpoſe is the Dialogue betwixt* Socrates *and* Phædrius: "*If any one ſhould tell* "*me, (ſays* Socrates) *Truly I know how* "*to apply thoſe things to the body, with*

"*which*

"which I can, when I please, make it
"hot or cold, vomit and purge, and
"cause other evacuations, upon the un-
"derstanding of which, I profess my self
"a Physitian, and affirm, that any Man
"instructed with this knowledge may be
"one; what answer do you think a sober
"Man would return to him? Truly
"(said Phædrius) *none at all, but ask*
"him, whether he likewise understands
"to whom, and when, and in what pro-
"portion every one of these Medicines
"are to be given, of which if he be ig-
"norant, the man must certainly be
"mad, who upon the score, either of
"gleanings from Authors, or for having
"been present at the Cures of some Phy-
"sitians, and understanding nothing so-
"lidly and rationally of the Art, thinks
"he is presently become a Physitian.
Many safe Medicines have been a-
bused by being given by Emperiks, and
have kill'd instead of curing, they not
suiting them to the temper, age, sex, and
strength

strength of their Patients? This Sennertus witnesseth, telling us of two Children killed by two old women with Oyl of Amber; the one broke out all over the body, as if scalding water had been powred upon it, and presently dyed, the other dyed vomiting and purging. Nay, that very safe Remedy Mercurius dulcis (call'd by Sir Theodore Meyern Calomelanos, from one Fair-black his man, who prepared it for him) has been to some constitutions accompanied with hazardous symptoms; and no Ptyalismus, or Salivation, can be given, it being from Mercury, without a great deal of circumspection. I therefore heartily advise our new-com'd Physitians, since they must be dabbling, not too much to Idolize Monsieur Mercury, nor fond too much of their late skill in Salivation, those that know it full out as well as they must, tell them by way of friendly advice, that it ought to be given to none but such as are εὐσωλαχνοι καὶ εὐσαρκοι. And

And now, good Reader, I have even wearied thee out, and therefore will hasten to my matter, and conclude this Preface with Hippocrates, Qui vocat medicinam omnium artium nobilissimam, sed propter ignorantiam eorum qui eam male exercent, esse omnium viliſſimam; fundamentum enim, quo pedem figunt, non habent, de quibus etiam Seneca, semper distant, nunquam ad veritatem perveniunt; *and the reason is, because they have no guide for direction, they are so enthusiastically wise, they scorn a Master to instruct them methodically in the true fundamentals of Physick, but shooting at random, with all their industry nothing is produced but* rudis indigestaq; moles. *And the same Author going on tells us,* Ignorantia est quæ omne malum in medicina generat, adeo ut medicus nunc passim ludibrio expositus, comicis in facetias & mundo in proverbium ivit. *And beside the ignorance*

orance of ſome, the malicious detracti-
ns of others, even among our ſelves,
ender us contemptible, which very
hing occaſions a good Galeno-Chymi-
al *Author to break out into exclama-*
ion, thus: Ubi ἀδελφία quam tan-
opere commendat Hyp. noſtro ſe-
ulo unus vilipendit alterum, dicta
& facta taxat, rixatur à tergo, con-
radicit, quæ non intelligit, ſeip-
um apud ignaram plebem extollit
ordida ſpe lucelli. *Pardon this Pa-*
ergy, I ſhall expatiate no more upon
ſordid a ſubject; what I am now to
y, ſhall be Obſervations from Expe-
iments, and therefore ought to force
faith, as to matter of Fact; if the
anner be but any way well, it is well,
farewell.

Thine,

E. W.

SPADACRENE Dunelmenſis.

CHAP. I.

Of ſimple Water, its qualities and uſe.

THat there is naturally pure ſimple water to be found, without any heterogenial admixture at all, is paradoxical, therefore by ſimple water I only mean ſuch as hath a proper colour, taſte, ſmell, weight, and conſiſtence, thin, light, cold, and moiſt, and no other thing diſ-

cernable, either by ſenſes or effects: And 'tis requiſite that water ſhould have theſe qualities, in regard of the many and neceſſary uſes of it, both for Men, Beaſts, Vegetables, and Minerals, in ſo much as there is no living for any Creature where there is no water. Ἄριστον μὲν ὕδωρ begins *Pindar's Olymp. Od.* 1. It was our firſt drink to quench thirſt, and by its tenuity diſtributes our nouriſhment as a Vehicle, nay after the invention of Wine it was uſually mixed therewith, as *Virgil* ſaith of *Bacchus*,

Poculaque inventis Acheloia miſcuit uvis.

I could heartily wiſh, that even *Bacchus* himſelf might herein become our Preſident, eſpecially ſince in other things he hath taught our too docil world, as *v.g.* by the ſame purity

purity and tenuity of the parts of water, how to make Beverages of ſundry ſorts. The *Egyptians* have their *Zythum*, the *Spaniards* their *Cerea*, the *Turks* their *Coffee*, and we our Ale and Beer, all extracted by water, the fitteſt Menſtruum for receiving the Faculties of all Medicaments and nouriſhment, eſpecially the ſecond qualities of mixt Bodies, and for this reaſon was it called *Panſpermia*. That ſimple water is cold, is without queſtion, for being heated accidentally, it ſoon returns to its natural coldneſs, the cauſe of heat being removed, but whether it be colder than Air is much to be doubted. I ſhall not now undertake the determining, whether Air be bred of water originally, or whether it be not a diſtinct ſubſtance of it ſelf, and receives only watery vapours, and after mature condenſation in the

middle Region, exonerates it self by Rain, Hail, Snow, &c. Only thus much I dare affirm, that the Sun beams are of much more force to elevate substances from the Earth, than most imagin, and consequently, those that hold the materiality of the Air to be from water, are not in opinion altogether paradoxical, but verisimilitudinary. And to prove this vigorous extraction of the Sun from sublunary Bodies, give me leave to give you an instance of what *Athanasius Kircherus* (whose company much honour'd me from *Marseilles* to *Rome*) most faithfully relates, *in Magica Parastatica, Parastasi I. Naturæ*, thus:

Morgana Rhegimorum.

"In the midst of Summer, when "the Sun boils the *Tyrrhene* Ocean "with most fervent rays, then is it "that

"that wanton Nature entertains the "wondering Eyes of the Inhabi- "tants of *Rhegium*, (a Town in *Ca-* "*labria*, moſt ancient, and no leſs "famous, for having been the Seat "of many Philoſophers) with a pro- "digious Spectacle in the Air. There "may you (whether with more de- "light or wonder is not ſoon deter- "mined) behold a ſpatious Theatre "in the vaporous Air, adorned with "great variety of Scenes and Ca- "toptrick Repreſentations, the I- "mages of Caſtles, Palaces, and "other Buildings of excellent Ar- "chitecture, with ſundry ranges of "Pillars, preſented according to the "Rules of Perſpective. This Scene "withdrawn upon the Sayling by "of the Cloud, there ſucceeds ano- "ther, wherein by way of excel- "lent Landskip were exhibited ſpa- "tious Woods, Groves of Cypreſs, "Orchards with variety of Trees,

"but those artificially planted in
"uniform rows, like a perfect Pha-
"lanx, large Meadows with com-
"panies of Men, and herds o
"Beasts walking, feeding, and cou-
"ching upon them: And all these
"with so great variety of respon
"dent colours, so admirable a com
"mixture of light and darkness
"and all their motions and gesture
"so counterfeited to the life, tha
"to draw a Landskip of equal per
"fection seems to humane Natur
"altogether impossible.

Now to our purpose: This pa
rastatical Phantasm was not cause
in the Cloud from any reflected ap
pearance of any such things, eithe
on the shore or adjacent fields, be
cause no such thing was there
which indeed increased the ardou
of curiosity in renowned *Kirther* t
cross over from *Messina* to *Rhegium*
at the usual time of the apparition
wher

where he detected the Causes of the whole Phænomenon; observing first, the Shores subjacent to the Mountain called *Tmna*, as also the bottom of the Sea, to be covered with shining Sand, being the fragments of *Selenites*, Antimony, and other pellucid concretions devolved from the eminent parts of the Land and contiguous Hills, that are richly fraught with Veins of those Minerals. Then he observed, that these transluced Sands being, together with Vapours from the Sea and Shore, exhaled into the Air by the intense fervour of the Sun, did coalesce into a Cloud, in all points respondent to a perfect polyedrical or multangular Looking-glass, the various superficies of the respondent Granates making a multiplication of the Species; and that these, being opacated behind by gross and impervious Vapours, directly facing

the Mountains, did make reflection of the various Images of Objects, respective to their various positions, to the eye. The several rows of Pillars in the Aerial Scene are caused by one single Pillar erected on the Shore, for being by a manifold reflection from the various superficies of the tralucent particles, opacated on the hinder part by dense vapours in the speculary Meteor, it is multiplied even to infinity; no otherwise, than if one single Image, posited betwixt two polyedrical Looking-glasses confrontingly disposed, is so often repercussed or reflected from superficie to superficie, that it exhibiteth to the eye almost an infinite multitude of Images exactly consimilar. Thus also doth one Man standing on the Shore become a whole Army in the Cloud, one Beast a whole Herd, and one Tree a thick set Grove. Some perhaps may

may judge this aſſertion, of the elevation of thoſe ſhining Grains of Vitreous Minerals into the Air by the meer attraction of the Sun, and the coalition of them there with the Cloud of Vapours, to be too large a morſel to be ſwallowed by any throat, but that cormorant one of credulity. If ſo, all we require of them is only to conſider, that Hairs, Straws, grains of Sand, fragments of Wool, and ſuch like feſtucous Bodies, are frequently found immured in Hailſtones, which ſurely are ſufficient arguments, that thoſe things were firſt elevated by the Beams of the Sun, recoiling from the Earth into the middle Region of the Air, and then coagulated with the Vapours, condenſed into a Cloud, and frozen in its deſcent. The truth hereof is evicted by the conſpiring teſtimonies of many other Authors, whoſe Pens are not

dipt

dipt in the fading Ink of an unjusti-
fiable Tradition, nor their Minds
deluded with the affectation of fa-
bulous wonders. Now to reassume
the debate, I shall only give my
judgment of the temperature of the
Air, as to heat or cold, and that it
is of its own nature cold is most ma-
nifest, (though *Aristotle* concluded
the contrary, from its efficient cause
which rarified it.) The *Stoicks* were
also of this opinion, because they
made the matter of Air to be water;
and this is also confirmed by its re-
turn to coldness (as formerly was
said of water) in case it be acciden-
tally heated; and we know that
under the *Zona torrida*, so long as
the Sun is within their Horizon and
strikes the Air with its perpendicu-
lar Beams, 'tis exceeding hot, but
after Sun-set the Air reassumes its
natural coldness 'till Sun-rise again,
nay though *Aristotle* thought it
unin-

uninhabitable becauſe of the extremity of heat, yet being the days and nights are there of the ſame length, *Joſephus Acoſta* concludes that the only Paradiſe upon Earth is under or near the Æquinoctial, neither can there any other reaſon be given why the Mountains which reach the middle Region of the Air are continually cold, and moſtly covered with Snow, but becauſe they wanting the reflection of the Sun-beams, the Air doth then enjoy its natural qualification. As for that whimſey of an *Antiperiſtaſis* in the middle Region from the Element of Fire above, and the reflection of the Beams beneath, it's an equal phantaſm with the Man in the Moon, who would have hot ſitting if Elementary Fire were immediately under him. But this opinion is exploded, and if ſuch Fire were, it would rather heat than cool the

Air.

Air. Is not the Air most cold near the Poles, where the long absence of the Sun, and its oblique Beams when present, give way to its natural coldness? Nay 'tis very probable that it is colder than water, since we see by a condensative faculty it congeals water into Ice, Snow, Hail, &c. which certainly is from the Air, being that underground, where the water is not freely ventilated with Air, there's no congelation, neither do I think other but the great coldness that's in Ice and Snow, depends meerly upon the mixture of Air, which being *per minima* interwoven with Salnitrous particles, is heightened to such a degree of coldness as makes it vigorous for producing a congelative effect. That water is most moist is the opinion of *Galen*, and very probably true, notwithstanding *Aristotle*'s reason to the contrary,

rary, concluding Air to be moſt moiſt, becauſe it's hardly contained within its bounds, which indeed is by reaſon of its tenuity and incontiguity of parts, being that dry exhalations extend themſelves as well as moiſt vapours, and as denſity compacts, ſo rarity cauſeth extenſion. I ſhall need ſay no more of the qualities which ſimple water ought to have, being ſuch as are every where obvious in Authors, and the ſenſes will diſcover either by taſte, colour, ſmell or touch, or elſe the effects will make manifeſt.

CHAP.

CHAP. II.

Of the Original of simple Waters and Springs in general.

GReat controversies have been betwixt the *Stoicks* and *Peripateticks*, and are yet amongst the Moderns, concerning the original of true Springs, which are no other than those of mixt waters. All difficulties and arguments touching this grand Debate are reducible into three heads; for either our perpetual and lasting Springs, called *Fontes perennes*, proceed from vapours congealed by cold in the second Region of the Air, and so fall down upon the Earth in Rain, Snow, or Hail; or they are ingendred in the bowels of the Earth; or they are perco-

percolated through sandy subterra-
neal channels from the Sea. For
the first, it may be granted that
Rivers Springs and Rivers receive
supply of waters from the Rain, as
we see our Rivers do, the *Rhine* and
Danubius swell upon the dissolution
of Snow, and in much drought
our Springs fail us, but those are
such as materially depend upon the
fall of Rain or Snow, and these sur-
ceasing the Springs also become dry,
they being principally ordained by
Nature for fertilizing and irrigating
the Earth in its production of Her-
bage, Fruit, &c. for the benefit of
Mankind, but such are only Land-
springs, and in no sort to be called
perpetual Springs, which notwith-
standing the want of Rain or Snow
for a long time are still the same, and
though great Rivers may almost be
dried up, by a long and lasting dis-
continuance of wet, by the driness

of

of the superficies of the Earth imbibing it in its passage, for the satisfaction of its drought, being *elementum siccissimum*, yet the heads of those Rivers flow plentifully at the same time, so that another causality must be found out than Aerial supplies; and supposing there were (which some wittily contend for) certain commissures, chinks, and hollow veins in the Earth, to receive much Rain that falls, yet what sinks into those clefts and caverns bears no proportion at all with that plenty which hurries headlong into Rivers, and thence conveyed into the Sea, and consequently very improbably proposed to be in a manner the adæquate causation of lasting Springs, there being also subterrraneal generations, which for their production require also a continued supply of water. The second opinion seems much less plausible

than

than this; for if the cauſe be ingendred in the bowels of the Earth, then it either proceeds from Earth it ſelf changed into water, as *Seneca*, which being a thing againſt all reaſon and experience, and back'd by no other authority than his own, needs no other confutation than pretermiſſion; or which is more probable, theſe Springs are made of Air pent up in the caverns of the Earth, and by the coldneſs thereof condenſed into water; this likewiſe, by Maſter *Ariſtotle*'s good leave, who here philoſophiſeth after his manner abſtruſely and metaphorically, exceedeth all rational belief; for how is it imaginable, that there are ſo vaſt and ſo many empty ſpaces in the Earth as to contain ſo much Air for the making ſuch a quantity of water, and that in a moment, as ſprings daily out of the Earth; nay how can ſo much Air be al-

lowed, as to furnish such abundance of water, without exhausting the whole stock, and consequently make a *Vacuum*, not only *dissemination*, which according to some is κατὰ φύσιν and natural, but also *co-acervation* and παρὰ φύσιν, to wit, such as is totally repugnant to the fundamental Constitutions of Nature; this I say cannot be granted, especially being that very many parts of Air serve for the making of one part of water containable in the same place, as Dr. *French* hath well observed; neither can any such transmutation of Elements be granted, for though according to *Helmont* water is convertible into vapours, and the same vapours into water again, yet are these vapours nothing else but rarified water materially, and Air will yield no more water that it contains vapours; but Air taking it purely of it self, *quatenus*

tenuis Air, is meerly Ætherial, without any mixture at all, or the leaſt atoms of vapour, ſuch as is only above the Atmoſphere, and wholly unfit for reſpiration, or a *pabulum*, for ſuſtaining the flame of Life, which neceſſarily muſt have a Niter therein for that intent. The third opinion is moſt ancient and moſt true, being alſo a divine *Epiphonema* of *Eccleſiaſtes*, *Omnia flumina intrant in mare, & mare non redundat, ad locum unde exeunt flumina revertuntur ut iterum fluant.* "All Rivers, ſaith "*Solomon*, run into the Sea, and yet "the Sea overflows not, into the "place from whence the Rivers "come, thither they return again. Some one Man, deſirous to prove all Springs to be from Rain and Snow, puts a ſtrange gloſs upon this evident place of Scripture proving all Springs to have their original from the Sea, and he tells us,

that the question is not about Rivers but Springs, and therefore *Solomon*'s asserting the Rivers to come from the Sea, makes out nothing for that of Springs; *Quasi verò*; as if Rivers were not from Springs, and if Rivers, then by necessary consequence Springs also are from the Sea. The same Assertor tells us also, that *Solomon* speaks of the Ebbing and Flowing of the Sea in great Rivers, into which the Tide runs, they being near the Sea, which truely is but too great a strets put upon the Text; first, because he tells us, that all Rivers, as well such as admit of Ebbings and Flowings of the Sea as those where no such thing is, come from the Sea; and secondly, it cannot be imagined that the whole bulk of water, which is running continually into the Sea, comes up again with the Tide, since the fresh is many Miles distant from

the

the Tide, and no more of the River comes back again by tiding than what the Sea forc'd up at the time of its tiding, which ſhortly after at ebbing is again by the current of the River hurried back from whence it came. How then is it poſſible that the wiſeſt of Men ſhould poſitively affirm all Rivers to come from the Sea, ſince 'tis evident that the whole River can in no ſenſe be called the Tide, no more than the Tide can be called the whole River? Surely ſuch as venture thus to paraphraſe upon ſo plain Texts, muſt either conclude the Writers of the Holy Writ endowed only with natural ratiocination and not inſpiration, or which is as bad, they muſt admit in Divinity what's now in Phyſick, a legality or promiſcuous toleration as to Scriptures interpretation. But of this no more. Let us proceed now in proving the Seas ſole ſuffi-

cieney of affording so great and lasting a supply of water for feeding of Springs. This Assertion certainly is of a most indubitable truth being we see in almost innumerable places waters bursting out of the Earth, not after the manner of boiling Fountains, but like vast impetuous Rivers, which in no probability can be granted to arise either from the condensation of Air or Rain and Snow falling, or any such like imaginary causation. But to make good the truth of this Hypothesis, by evidencing the manner how the Springs are at such distances deduceable from the Sea, even to the tops of highest Hills; *Hic labor hoc opus est.* I imagin the only difficulty herein consists (as I have said) in this, that the adverse party cannot conceive (granting the Sea to be lower than the tops of Mountains) how it should, contrary to its

natura

natural propenſion, be elevated to ſuch a height. For the better ſolving of which doubt, I will firſt tell you, that not only *Tully* and *Ariſtotle*, but many ſolid Divines, hold that the Sea is as high if not higher than the higheſt Mountains, otherwiſe the Sea and Land make not up one global figure, and if ſo, the motion of the Sea to the tops of Hills is natural, and not at all beyond its level; but I go not about to defend this opinion. Granting therefore the Sea to be lower, I then argue thus, that 'tis not unknown to any that this Terreſtrial Body, eſpecially the bottom of the Sea, hath innumerable meatuſes, and is perforated with ſundry voraginous inlets and patent mouths, into which and through which, as ſo many hydragogical channels, water may freely paſs, otherwiſe why do winds proceed more apparently,

and after a more violent manner from the Sea than from the Land they being caused by the eruption of exhalations from those fissures in the bottom of the Sea: which being granted, 'tis no hard matter to allow the afflux and reflux of the Sea pressing the other water with their exceeding great weight, to exalt the same through those subterraneal channels even to the tops of highest Mountains; for the water being thus pressed with the adventitious access of water, either drawn thither by the Moon, or caused as some think by the Earths motion, must needs force it self downward spontaneously, and finding those patent passages, is (as I may well say) thrust into those *hydrophalatia* of the highest Mountains, where seeking out an *exit*, being thus burdened with weight, bursts forth into Springs and Rivers. If it should

be

be objected, that the flux of the Sea and Tides are ſpent in their courſe into Rivers, I anſwer, that theſe ſubterranean caverns will be firſt ſerved, as being more immediately under the weight, and what is to ſpare only runs into Rivers, it being natural to all heavy bodies, even having no force put upon them, to deſcend perpendicularly, rather than in an oblique line. Others may ſay, that if the flux of the Sea, or weight of accumulated waters, ſhould cauſe Springs, then would our Springs ceaſe running when the Tide or flux of waters is out from our parts, and ſo the like of other parts of the world, to which I reply, that the Sea ebbs and flows every twelve hours over the face of the world where ever any ſuch reciprocation is, and therefore little or no time is left for ſuch a ſurceaſe of weight, as to alter the current of Springs,

Springs, and not only those that have the same Meridian as *London* and *Dunbar*, though some Degrees different in Latitude, have every twelve hours full Sea at the same time, but also such as have a different Meridian, and not the same in Longitude, have notwithstanding the same returns as to space of time, though not at the same time. If any Seas be without these Tides, as the *Baltick* Sea is said to be, its being so near the Northern Pole, and some part thereof within the Artick Circle, where the Air is thick and gross, may supply the want of Tides as to Springs. Which that I may make good, and thereby answer all other imaginable doubts and objections against this assertion, I shall take occasion of producing a second reason perswading to this original, *viz.* the mighty Tempests and turbinious Winds, the descent of Vapours,

pours, and chiefly the incumbency of the Air it ſelf, by all which the water is both preſſed and expreſſed; and for further manifeſtation hereof, give me leave to illuſtrate as a moſt convincing argument, the great weight of Air upon this terraqueous Globe, which is apparently made out by *Torricellius* his Experiment in a Veſſel of Quickſilver, inſtanced by that truely Noble and Illuſtrious Gentleman Mr. *Boyle*, thus: "Having prepared a Glaſs Tube, and "ſtopped up one of its extremities "with a Seal hermetical, fill it with "Quickſilver, and ſtop the other "extream with your middle finger; "then having inverted the Tube, "immerge the extream ſtopt by your "finger into a Veſſel filled with "Quickſilver, not withdrawing "your finger until the end of the "Tube be at leaſt three or four Inches "deep in the ſubjacent Quickſilver,

"for

"for so you prevent all insinuation
"of Air. This done, and the Tube
"fixed in a perpendicular position,
"upon the subduction of your finger
"from the lower orifice, you may
"observe almost half the Quicksil-
"ver contained in the Tube to de-
"scend speedily into the restagnant
"or subjacent Quicksilver, leaving
"almost half of the superiour part
"of the Tube, according to all ap-
"pearance, at least void and empty.
"Now place this Vessel thus fitted
"upon the top of an high Hill, for
"example, where the Air is less
"weighty and incumbent than at
"the bottom of the Hill, and you
"shall perceive the Quicksilver in
"the Tube to descend, and that in
"the Vessel made higher; whereas
"if you remove the Vessel to the
"bottom of the Hill, where the Air
"is grosser and more incumbent,
"that Quicksilver in the Tube will
"ascend,

"aſcend, and the other in the Veſſel
"deſcend; ſo that the variety of
"places where the Air is various,
"makes a variety of motion higher
"or lower in the Quickſilver, which
"cannot be from any other cauſe
"than the different gravity of Air in
"different places; for the Air of its
"own nature is heavy, and can be
"ſaid to be light only comparitively,
"or as it is leſs ponderous than Wa-
"ter or Earth, nor can there be
"given any more manifeſt reaſons
"for the Airs tendency upward
"from the convexity of the Earth
"than this, that being in ſome de-
"gree ponderous in all its particles,
"theſe deſcend from the upper Re-
"gion of the Atmoſphere, and bear
"upon and mutually compel each
"other until they beat upon the ſur-
"face of the Earth, and are by rea-
"ſon of the ſolidity thereof reper-
"cuſſed up again to ſome diſtance;

"ſo

"so that the motion of the Air up-
"ward is properly a resilition not
"natural but violent. Now whe-
ther this gravity be congenial and
inherent in the Air, or whether
it be caused by a conformity to the
magnetick attraction of the Earth,
matters not at all as to our present
purpose, being we have a depres-
sion amongst the particles of the
Air, in their tendency from the At-
mosphere down to the surface of our
Globe, and the diameter of the
Sphere of Air being much larger
than that of the terraqueous Globe,
we have thereupon from the convex
to the concave thereof a compres-
sing weight upon the surface of wa-
ters equivalent to that upon the re-
stagnant Liquor in the foresaid Ves-
sel. I shall further urge some Ar-
guments *de facto*, and tell you, that
Pliny writes of a Spring which pun-
ctually observes the Seas motion in
its

its ebbing and flowing. *Antonius Vaſconzello*, a Father of the Society, in his Deſcription of *Portugal*, mentions a ſtrange and remarkable Lake on the top of the Mountain *Erminius*, whoſe nature is, ſaith he, *ut æſtuante oceano & ipſe pariter æſtuans ſit latus*, that is, punctually to obſerve the Seas reciprocation, even as to its raging more or leſs with ſourges; *ſiculentum ſanè* (ſaith *Kircher*) *occulti cum oceano per hydragogos canales correſponſus ſignum*, an evident ſign of the ſubterraneal correſpondence this Lake hath with the Ocean through hydragogical conveyances and caverns. And learned *Kircher* alſo aſſures us hereof when he ſaith, *Aliqui fontes fluxum & refluxum maris æmulantur*, and in particular, relates a lepid ſtory of a Fountain, or rather a River in *Weſtphalia*, in a fabulous Plain, breaking out with the Tides twice every natural

tural day, with such a violent force and noise (whence 'tis called *Bollerbrum*) that it overflows all the circumference of that Valley, and decreasing after the same manner as it increased, at last hides it self totally in its head. Bishop *Theodorus* (saith he) *in media hujus superficie mensam opiparè lautéque construxit, &c.* made a most magnificent Banquet in the middle of this Valley, and thither invited and brought with him divers Ladies, when on the sudden the River bursting forth, whilst they caressed Nature and made merry, did so wet them, even more than mid-way up, that they were forced to wade out, when as those that were conscious to the design, withdrew themselves by time, and sufficiently derided the poor Females infortunity. *Interdum seria ludis, & è contra.* And thus much, as far as we poor haggard Mortals can

reach

reach by the Light of Nature, being Moles rather than Men ever since our first Fall, whose weak and narrow Opticks lead us only to the inspection of the exteriour and obvious parts of Nature, not perspicacious enough to penetrate her interiour and abstruse excellencies; nor can we speculate, saith Doctor *Charleton*, her glorious beauty in the direct and incident Line of Essences and formal Causes, but in that reflected and refracted one of Effects, nor that neither, without so much of obscurity as leaves an incertitude in our apprehensions, and restrains our ambition of an Apodictical Science, to the darksom Region of meerly conjectural Speculation. If therefore I have erected any verisimilous conjecture concerning the causation of Springs, and their derivation from their proper Originals, and given but any pro-

liable Solution of that abstruse Phænomenon, I hope others as well as my self will rest contented.

CHAP. III.

Of the true Essence and constituent Principles of Vitriol.

GReat, pregnant, and teeming Constitutions, and such as are constellated unto knowledge, think they come short of themselves, if they outgo not others; and indeed they may well think they do nothing, 'till they outdo all. But my *Minerva* bids me say, *Non numeri sumus*, and I shall think I have done well, if in the disquisition of the true nature of Vitriol, I hold the stirrop to Pyrotechnical Philosophy, and so urge nothing, but what Autoptical

topical experience, reaſon and authority, ſhall illuſtrate. Firſt then I define Vitriol to be a Mineral Body, generated in the Bowels of the Earth from a ſulphureous Spirit, Water, and the Mineral either of Iron or Copper, or both; and that theſe are the material Ingredients of its compoſition appears from hence, becauſe its acidity and cauſtical acrimony it neceſſarily hath from the Spirit of Sulphur, its clarity and fluidity from Water, and its colour and metalline taſte either from the Mineral of Copper or Iron; and of theſe three, *viz.* Spirit of Sulphur, Water, and an Ironiſh or Copper Glebe, is Vitriol compoſed, which is alſo called *Atramentum Sutorium*, and by the *Greeks* χάλκανθον. Some notwithſtanding will have it compoſed of Allum and Sulphur, becauſe, ſay they, take a Vitriolate Loam or Clay, and dilute it with

water, and upon ſtanding in a cold Cellar you may gather thence an alluminous Efflorescence; to which I yield ſo far, as that there may be a mixture of Allum with Vitriol, in regard of their affinity, but it follows not thereupon, that Allum makes up its compoſition of parts; for though as all other Minerals have their acidity from Spirit of Sulphur, and are both under that general notion of Salt and Concrete Juyces, yet cannot they, Vitriol eſpecially, be called purely and properly Salts, but make up ſpecifick differences of *ſuch* Salts. Others deny Sulphur to be an ingredient, becauſe in the calcination of Vitriol there's no ſmell of Sulphur, as is when Antimony, Orpin, or Marcaſites, are calcin'd, though theſe be far more compact ſolid Bodies; but the reaſon of this is, becauſe it partakes only of the Spirit and more ſubtil

ſubtil parts of Sulphur, the others of the groſſer ſubſtance. Now to ſhew you how Vitriol becomes a ſpecifick Salt, I muſt firſt premiſe this general Hypotheſis, that there is a common Salt of Nature, and Water, which diffuſe themſelves throughout all the particles of this Geocoſm, and being conſidered in themſelves, are indifferent Subjects for the reception of various forms, accordingly as they meet with diverſity of Glebes in the bowels of the Earth; therefore when Water impregnated with Spirit of Sulphur, or a Vapour from that accenſed Body of Sulphur, paſſeth thorough a ſalſuginous Glebe, already endowed with the common Salt of Nature, it produceth Salt, when thorough nitrous Veins Niter, when thorough alluminous Allum, when thorough a Copperas white Vitriol, when thorough a Silver Mine blew

Vitriol, and lastly when through an Ironish Glebe it shares of some particles of Iron (more or less according to the proportion of the Waters acidity and the fertility of the Vein) and produceth green Vitriol. So that if Water be thus tinged with this acid Spirit, it becomes the true and proper *Menstruum* for the dissolving of all sorts of Glebes whatsoever, and this Liquor thus repleniſh'd, *v. g.* with the raments of Iron, is condenſed into this Vitriol which now I speak of. And that I may further declare some genuine Effects of this Vitriol, I say that 'tis caustical, and eateth into and corrupts all sorts of Metals, excepting Lead, which it cannot penetrate by reason of its Mercurial parts, which resisteth and represseth its activity. But to analize it more intrinsically, this Vitriol consisting of the aforesaid three sub-

ſubſtances yieldeth ſpagyrically ſeven ſeveral Medicaments, firſt, there is extracted from it *per Balneum vaporoſum* Water, which is called *Ros Vitrioli*, becauſe of its Aerial lightneſs, and partakes leaſt of all of the Spirit of Sulphur, this corroborates the Bowels, mitigates the inflammation of the Blood, and ſtrengthens the Brain with its heat and ſiccity. Secondly, there's another Water drawn *per arenam*, and this partakes more of the Spirit of Sulphur, and is called the ſecond Water of Vitriol, it purgeth the Reins, opens obſtructions in the paſſage of Urine, and helpeth all internal corroſions, if taken in Veal Broath faſting. Thirdly, there's extracted another ſubſtance of Vitriol, which is the moſt ſubtil portion of Sulphur, and called the Spirit of Vitriol, a moſt admirable *Prophylacticon* or preſervative againſt all ſorts of Di-

ſeaſes, for whatever it finds in the Body putredinous, poyſonous, or apparently diſpoſed to any capital Diſeaſe, it preſently incides, attenuates, and waſtes, it purifies the Blood from all fuliginous damps, prevents the Stone, purgeth the Reins and Bladder, conſuming all mucilaginous and tartarous viſcoſity whatever. Fourthly, being tortur'd with a further degree of Fire it gives a certain Oyl, not ſo ſafe to be taken inwardly, though ſome, by reaſon that it's a Narcotick, uſe it in Maniacal Diſtempers, but outwardly it is uſed for curing Impoſthumes. Fifthly, a certain Vitriol is brought over the Helm, which Chymiſts call *Purificatum* or *Sal Vitrioli*, being only the remaining Dregs from the acid Spirit, repreſenting a purpliſh thin Earth, and good externally uſed as aforeſaid; this is not *Sal Vitrioli Vomitivi* ſo much uſed at pre-

preſent, being a repeated Solution of white Vitriol, with frequent filtrations. Sixthly, all the Spirits being drawn off, there remains a certain Aerial ſubſtance, being a moſt ſubtil duſt of Vitriol, which may be called *Ferrum* or *Æs Vitrioli*, being it may be reduced into either of them; this cleanſeth rotten Sores, and is an Incarnative. And ſeventhly and laſtly, all Diſtillation ended, there remains in the bottom of the Retort or Reverberatory a *Caput mortuum* or Colcotar, or *Terra Vitrioli*, and inſervient for mixing with cicatrizing Plaiſters.

Thus have I, to my weak ability, analyzed the whole Body of Vitriol; *In quod quid reſolvi poteſt, ex illo neceſſario debet conſtare.* But before I advance further in my journy homeward, I will inſtance only in one proceſs of making artificial Vitriol, for the better clearing and underſtanding

standing the nativity of natural Vitriol, which Dr. *Browne*, as an Eye-witness, saith in *Hungary* to be thus: "There is (saith he) a Vitriol "Mine nigh the Golden Mine, the "Earth or Ore whereof is reddish, "and sometimes greenish, infuse "this Earth in water three days, "then poure off the water, and "boil it seven days in a leaden Ves"sel, 'till it comes to a thick gra"nulated whitish or greenish sub"stance, according as the Ore is "either of Brass or Iron, and this "is then pure Vitriol, and being "reduced to a Calx in an Oven ser"veth to make *Aqua fortis*. But there is besides the Ore or Glebe of Vitriol, a natural crystallized Vitriol in a Mine in *Paradise-Hill* in *Hungary*, and the same Doctor was conducted by a Mine-man at *Schemnitz* under ground, 'till he came where he shewed him great quantities

tities of natural Vitriol, it ſhooting upon the ſtones and earth, upon the floor and ſides of the paſſages, as it doth by Art in the pans and about the ſticks, not hanging from the top, as ordinarily it doth, like Iſicles. The Principles and Nativity of Vitriol being thus cleared, I ſhall now only evidence the great affinity betwixt Iron and Copper, and conſequently betwixt the Vitriols of them both, and if you pleaſe of their Effects alſo, and this not only as much conduceable to my preſent purpoſe, as for the oppugning that receiv'd Opinion of Philoſophy, which admits no tranſmutation of Metal. This aforeſaid learned Traveller writes of two Vitriol waters in the Copper Mine of *Herongrandt*, which turns Iron into Copper; theſe Springs lye very deep in the Mine, and the moſt uſeleſs old Iron is hereby turned into the pureſt

Cop-

Copper; the Iron being left therein about fourteen days is rendred more ductil, malleable, and easily melted Copper than any other. The miraculous, because universally learned *Kircher*, and other sound Naturalists, will not have this to be a transmutation of one Metal into another, and their reason is, because this water saturated with a *Vitriolum Veneris*, and meeting with such a Body, so ready to receive it as *Mars*, it deposeth *Venus*, who immediately insinuates her self so far into *Mars*, that she doth *dividere* and *imperare*, and at last substitutes her own Body, and precipitates that of *Mars*. But Dr. *Browne* averreth, that though in the changing of Iron into Copper in these Springs, many parts are precipitated and lye at the bottom in powder, yet these parts, saith he, are not Iron but Copper, for that he took of this powder out

of

of the Spring and melted it into excellent Copper; ſo that if the Iron be not totally changed into Copper, God knows what becomes on it. If this be ſo, (and we have no reaſon to think the contrary) why Art, in the imitation of Nature, may not make the ſame tranſmutation I know not, and then welcome to Town the Philoſophers Stone. I am ſure I ſaw in the Grand Duke of *Florence* his Gallery of Rarities, a Horſe-ſhooe, half Gold half Iron, that part which is now Gold having been formerly Iron, as the univerſally received tradition of that place aſſerteth. But this is not all, for the ſame Doctor ſaith, he drank out of an handſom Cup made out of this ſort of Copper, which formerly was Iron, and gilt all over, and had a piece of Silver Ore faſtened in the middle of it, with this Inſcription graved on the outſide.

Eiſen

Eilen were ich, kupfer bin ich,
Silber trag ich, golde bedeckt mich.

Copper I am, but Iron was of old;
Silver I carry, covered am with Gold.

I would willingly beg pardon, and expatiate a little further into this large field of Physiology, and say something of the Seeds of Petrifaction, or lapidifical Principle, which converts all Materials it meets withall into a stony concrete; but I shall only hint at some one president, with the definition of the thing it self; whereby you may be more confirmed in that opinion of a corporeal transmutation of of Substances. *Succus lapidificus* (saith *Kircher*) *nil aliud est quam humor insensibilium corpusculorum ex lapidosis veris nitrosis salinisque locis abrasorum mistura constitutus elaboratusque*; and

and these *corpuscula* being perfectly mixed together and united, make up this *Succus Lapidificus*, or humour, and being they have a natural tendency of reduction to their own former state and condition; hence is it, that through their spirituous Subtilty they penetrate the most abstruse and most minute fibrous particles of whatever convertible Body they meet withall, and by their acrimonious acidity consume, and as it were eat up their softer parts principally, and in their place substitute themselves, by means whereof they imbody themselves into a stony concretion. This definition thus evidenced, is made good by a *Manifesto* from the forenamed Doctor: "For (faith he) the hot Bath of *Eisenbach* petrefieth, so as those Trees "with which they boilt the sides "of the Bath, next above the water, are entirely turned into Stone,

"and

"and it's not unpleasant to observe,
"how Nature doth here assist Art,
"and out of the Body of a Fir
"frames a most stately Column of
"of Stone. I will end this Chapter with a remarkable piece of Discourse this Doctor had at *Buda*, the digression I hope is pardonable. One *Mortizan Ephendi*, (a *Turkish* Person of Note; and who had been Envoy Extraordinary with our Emperour at *Vienna*) treated this Doctor very kindly; and amongst other discourses asked him what was the King of *Poland*'s Name, and after he had told him his Name was *Michael Wisnowitski*, his Reply was, *what?* Michael, *that's a good Name, that's the Name of the greatest Saint in Heaven, excepting* Mary. An Expression I must confess no less admirable in a *Turk*, than commendable in a *Christian*.

CHAP.

CHAP. IV.

Of our Vitrioline Spaw at Durham.

I Confeſs I have even ſhipwrackt your patience, and kept you out too long at Sea. If I have been your faithful Pilot, ſo far as to land you at the ſafe harbour of the knowledge of Truth, I have much more than I can deſerve, and as much indeed as I can deſire, eſpecially ſince our Voyage hath been full of difficulties, which have caſt us upon thoſe inevitable Rocks of incertitude and obſcurity, but however, though I have been through thoſe Foggs and Miſts of various Opinions ſo benighted, that I dare not be magiſterial in any of my

Physiological Disquisitions, yet I can boldly take the confidence to welcome you to *Durham*, where you shall find the entertainment of a most delightful Field, raised and heightened almost round from its adjacent continents, ventilated with a most sweet and open Air, accommodated naturally with convenient Walks, and neighboured with an useful Wood. Out of the midst hereof riseth this our wholesom and plentiful Spring, which as it enricheth our Inhabitants with an inestimable Treasure of Health, so will it compensate the pains of Foreigners in order to the same. And that I may the better evidence the truth hereof, and come directly to the prosecution of our main Design, I will draw a Map or Scheme of the Heads of our intended Enquiries, that so we may prepare the Minds of our Readers to accompany us more

more ſmoothly and eaſily to a right underſtanding of what we intend to prove. Firſt then, let me demand, what is wanting in this our Vitrioline Spaw to make up the true Body of Vitriol, and compleat its definition expreſly laid down in the foregoing Chapter? That it hath Water in a moſt plentiful current is evident, that it hath alſo a Spirit of Sulphur is apparent from the acid taſte thereof, for nothing can make this taſte in Minerals but Spirit of Sulphur, as the renowned *Kircher* expreſly manifeſteth in theſe words, *Baſis unica & abſoluta origo omnium aciditatum Mineralium eſt à Spiritu Sulphuris acido*; neither need we much doubt of Sulphur and its vaporous Spirit where we have ſo much Coal. The only doubt then will be, whether this our Water thus impregnated with acidity hath in it a Mineral Glebe of Iron or not?

And that this may clearly appear; I first call in the Senſes of Smelling and Taſting to atteſt, it having both a Vitrioline or Ironiſh taſte and odour. Secondly, let our own Experiments witneſs the ſame, for having diſtilled it, both after the manner expreſſed in the former Chapter and by Retort *ex arena*, from a Pottle thereof there remained in the bottom a ruſty Iron-like powder, in quantity about ten grains, which in taſte had a piercing ſharp Vitrioline pungency, ſomewhat harſh. After diſtillation I tryed it by coction, 'till a third part was conſumed, the remainder I let ſettle for three days, that the *contentum* might be the better ſeparated, and the ſediment was the very ſame as formerly. Indeed by evaporation I had much leſs ſediment remaining, which makes me more than probably conjecture, that it is impregnated,

nated, not ſo much with the corporeal ſubſtance as with the ſpiritual and ſubtil particles of the ſaid Vitriol; for the Water being acuated with a ſulphureous acidity, and paſſing ſwiftly through ſome hungry Vein of Iron, corrodes lightly its more tenuous and Aerial parts, reſolving them ſo, as the Water imbibes in a manner only the volatile Atoms, with which it becomes thus ſaturated; I ſay volatile, becauſe though diſtilled in a Glaſs Still and luted hermetically, yet are the Spirits ſooner ſublimed than the Water, and take wing ſo ſwiftly, that before any Water come over they are unbodied and evaporated, no odour nor taſte at all remaining in the Water, neither will it then become any otherwiſe tinged with Gall than common Spring-water, though before diſtillation, with the mixture of two or three grains of

the powder of Galls, an ordinary Glass full becomes as purpureously red as our genuine and best coloured Claret. And hereupon I now come to my third Argument, desumed from the tincture it hath from the powder of Galls, and truly this is a work easily performed upon one legg, notwithstanding a Gyant-objection, or rather Assertion, of a learned, industrious, and Pyrotechnical Physitian, to the contrary. I remember the *Hyperaspistes* of *Scarborough-Spaw* is highly charged with a *Non sequitur*, in saying, a small quantity of Gall being put into the Spaw-water doth turn into a dark coloured Claret, *Ergò*, there is Vitriol in it. I hope I have no great guilt in intermedling with others Affairs, having, God knows, but but too much to mind at home, but when Justice, Truth, and my own present Concern command, I must though

though with reluctancy affirm, that his *Ergo* ſtands good, and if the unburnt Allum-ſtone Experiment be the ſame with that his Antagoniſt relates of Coal, they neither will hold water, I mean tinctur'd water. For having followed his own directions, I took a pretty quantity of Coal, powder'd it, added Spring-water, ſharpened with Spirit of Sulphur for its diſſolution, filter'd it 'till 'twas clear, then put powder of Gall thereto, and what thence was the reſult? truely the adding of the Gall added no more change as to colour, than what was before the Gall was added, that is, the water both before and after had a dark dusky colour, ſuch as is the natural tincture of all Coal, and that was all. Let not my good Friend ſay, (which was his Anſwer to the *Scarborough-Buckler*) that I made only an infuſion, and no diſ-

ſolution; for I ſharpened the water to divers degrees for its more intim penetration and diſſolution. I am confident this conſcientious good Man grounded this poſition upon ſome imaginary probability, no autoptical atteſtation, but I ſhall excuſe him better preſently. I have made no tryal of the tincture from unburt Allum-ſtone, but I dare aver, that if it tingeth upon the mixture with Gall, 'tis *quatenus* there's Vitriol mixed therewith, there being ſuch an analogical agreement 'twixt Allum and Vitriol, both as to ſenſe and ſenſible operations, that 'tis no hard matter to admit of a combination, they being both under the *genus* of ſaline concrete Juyces, and whether ſo differenced as to make a diſtinct *ſpecies* of Salt I ſhall not here endeavour to determin; eſpecially ſince *Kircher* affirms from experience, *in vitriolo alumen continetur*,

netur, luto enim ejus aqua diluto, alumen ex eo efflorescit; and if in Vitriol Allum, why not in Allum Vitriol? The ſame alſo may be ſaid of Coal (to make good my late promiſe to my Friend) that, it may be, all Coal is not alike, ſome without, and ſome with an intermixture of Vitriol, diſſeminated and interſperſed amongſt its ſulphureous Veins, and therefore it may be our good Brother in his Experiment light caſually of a Coal thus vitriolated, but then we muſt not conclude the Coal, but the Vitriol in the Coal, to give the tincture with Gall. And that this my precarious *Hypotheſis* may have ſome Pillar to lean upon, I muſt confeſs I have ſeen much, and have divers pieces of a Mineral Marchaſite or *Pyrites*, in which, though doubtleſs there be much Sulphur, as appears by its ſcintillation and odour, the powder there-

of

of being cast into the fire, as also from its unctuosity upon distillation; yet may this be only the embrionated Sulphur of Copper or Iron, and the acid water passing through the Coal Mine interspersed therewith, licks up only some corpuscles of the Metalline parts of this Marchasite in its passage, as being its desired *Alkali*, and being impregnated herewith, renders it self thus inriched for our use; neither can it be rationally said, that the Sulphur is likewise imbibed, for being an unctuous and inflammable ingredient in the *compositum*, it resists the activity of the acid Vehicle, as is manifest from the very Essence of Sulphur, out of which is made an Ointment for preserving Cables and such like from corrosion, and makes them live, (speaking metaphorically,) in the water everlastingly. But admit this water should

ſhould participate of the Sulphur, is it therefore to be rejected? 'Pray how many wholſom Preparations of Sulphur are taken inwardly and ſucceſsfully in Phthyſical Diſaffections? But however it be, as to this, here we certainly have a Vitriol yielding a proper tincture upon the acceſs of Gall, which is all I contend for. I will yet argue further for this our Vitrioline Spaw. Let any one drink Vitrioline of Iron diſſolved in water, and he ſhall ſee his Excrements tinctur'd either black or greeniſh, from the precipitation of the Vitriol by the internal *Alkali*, and the very ſame effect is produced by drinking of this our *Spaw*: This cannot be from the Vitriol of Copper, becauſe this Metal makes white Vitriol, not green as Iron doth, neither will any ſay we have any Copper Mine, as we have Iron, in theſe parts. Moreover,

write

write what you pleaſe with the Solution of ferrugineous Vitriol, and after it is dry there ſhall nothing appear, but beſmear what is written with a ſimple Infuſion of Gall, and in a moment the *Alkali* of the Gall makes the Letters black; and again by any potent acidity, as *v.g. Aqua fortis*, they are quite deleted; and yet again by any fixt *Alkali*, they become black as before: By which foundation of Cryptography 'tis apparent, not only that the acidity of Vitriol tingeth not black, without it be imbibed and abſumpted with an *Alkali*, but alſo that no *Alkali* tingeth black without a vitrioline acidity. This my poſitive Aſſertion is ſufficiently back'd by that inquiſitive Chymiſt and experienced Philoſopher *Ot. Tachenius*, who after much pains taken in this Diſquiſition concludes thus: *Unde liquet* (ſaith he) *quod Sal volatile vel*

Alkali

Alkali gallarum vel corticum granatorum vel herbarum vulnerariarum, non tingunt colore nigro, niſi cum ferro in minerali acido ſoluto. But why is not our Urine tinged black as well as the Excrements? This I ſay is becauſe the Colcothar is precipitated before the Liquor comes into the Miſeraicks, ſo as it neceſſarily remains in the Guts. *Cyprus* Vitriol indeed, being much from Copper, turns black with Galls, but this is by reaſon of its intermixture with Iron, for *Vitriolum Veneris* purely without *Mars* turns not black with Galls, as that of *Mars* without *Venus* will, though they being as Man and Wife joyned together, cannot well be found the one without ſome mixture of the other. White Vitriol of *Corinth* partakes of both, but more of *Venus*, for which cauſe, as being alſo not enriched much with the *Acidum naturale*, it ſlowly be-

becomes black with Galls. But *Roman* Vitriol, which partakes moſt of Iron, preſently tingeth black; ſo doth artificial Vitriol that is made of the ſhavings of Steel and Spirit of Vitriol, the Vitriol corrodes and reſolves the ſhavings and becomes ſweet; and hence it is indeed, that all chalybiate Medicines are ſo powerful in all cochectical and obſtinate Diſeaſes, the *Alkali* of the Steel imbibing the acidity and ſowreneſs of the Blood, and conſequently dulcifies the ſame. And this is the principal reaſon our *Spaw*, being impregnated with Vitriol of Iron, produceth ſuch rare effects. If it be demanded, why theſe ferruginous or vitrioline acid Fountains make not the Tongue and Mouth black, as it doth the Excrements? I anſwer, that this happens, becauſe the acid Spirit, mixed with the water, corroding the immature Vein

Vein of Iron, or whilſt it is *in principiis ſolutis*, is not as yet ſaturated, we drinking it whilſt it is in the very action of corroſion, and hath not yet time to precipitate in the Tongue, but ſo ſoon as this grateful acidity is ſnatched into the Stomach, the Colcothar being precipitated gives the tincture, the acidity being then perfectly coagulated with its *Alkali*, and whatever mucilaginous matter it meets withall in that coagulation, it turns all into its own nature of conſtriction, as we may ſee in the nativity and concretion of that *Herculean* Diſeaſe the Stone, and this *coagulum* is that which ordinarily Phyſitians call *Oppilation* or Obſtruction, a noted hard word amongſt our Water-caſters, thoſe pedantick Pretenders to Science, who if they can but ſhake an Urinal, and gravely tell you of crudities and obſtructions, or that the

Archeus

Archeus is inraged, *&c.* believe themselves wise enough to rival *Solomon*, when indeed they are as truely ignorant of the original of those words as their deluded Patients, who even gape with admiration of their profound Physiology. But to return home from the country, this our water is therefore to be drunk at the Fountain-head, for if it be let stand and settle any long time, the action, and consequently the benefit and virtue ceaseth, the acid Spirit being imbibed and drunk up by the immature Iron or Vitriol thereof, enfeebled and disarmed of its acidity, and together with the resolved Mineral is precipitated into Oker, which lyes at the bottom in a yellowish, not a black colour, as it is seen in all Vitrioline *Spaws*, it having then no other proper *Alkali* that it meets withall, as it doth in the Stomach or elsewhere, to cause a blackish

blackiſh precipitation; neither is its acidity ſo diſarmed by the corroſion of the Iron Vein, that it quite loſeth its reſolving and coagulating force, with other *Alkalies* in the Stomach, *&c.* for the acidity is yet predominant, and after it hath ſpent part of its virtue upon the Iron raments, there is yet ſufficient remaining for reſolution and coagulation elſewhere, accordingly as it ſhall meet with other *Alkalies* for that purpoſe; for if this were not ſo, we ſhould not have that acidity which ſenſibly we perceive and taſte in this water, and then *divites dimittuntur manes.* Beſides this ſulphureous acidity in the water, there are unſpecificated acids in the humours of our Body, which run headlong with a natural propenſity to the Vitriol or Eſurine Salt of Iron, and therewith coagulated and ejected, together with the obſtru-

give humours, upon a strong irritation of Nature to expel her Ironish Enemy, and upon this account it is, that Iron and Steel, or rather their Vitriol, are said to open Obstructions. I would not have any think, that because Nature riseth in arms against all that's offensive, as Iron is, and endeavours its expulsion, that therefore Purgatives are not convenient, for even then are they most fitting, when the coagulation after fermentation is most prevalent, Nature can but do her utmost endeavour, and when that is not sufficient, then the Physitian takes up the Cudgels for her assistance. And here, to rectifie the misapprehensions of some, I must beg pardon to tell them, that what Purgatives we administer work not by attraction or election (unless we of that freedom to Druggs which some deny to our selves) but by irritation

tation in the *primæ viæ* and Bowels, and by fermentation in the Blood and Humours, and this purgative power by irritation depends not of the five Principles, Salt, Sulphur, Water, Earth, and Spirits, *disjunctim* and ſingly, but of moſt or all of them *conjunctim*, though I confeſs the fermentation is almoſt only from the Salts. I fear I have ſpoken Enigmatically and in the dark to ſomes underſtanding, in ſo often repeating the word *Alkali*, I will therefore briefly explain the Etymology and ſignification thereof. By *Alkali* therefore, or *Sal Alkali*, is meant all ſuch Salts as mortifie whatſoever acidities they meet with all, not only in the Vegitable, but alſo in the Animal and Mineral Kingdom; I ſay, whatſoever imbibes or ſucks up the acid Salts, and conſequently ſweetens the Blood and Humours, is called by the name

of *Alkali*, whether it be a fixt Salt or volatile, manifest or occult. This *Alkali* is made of the Herb *Kali*, brought to us out of *Ægypt*, being there burnt into ashes, and so transported: Some call it *Soda*, others *Alumen catinum*, but properly 'tis called *Sal Kali* or *Alkali*. I will now hasten to speak of the Virtues of this our *Spaw*, which indeed was my main Design proposed in this trifling Treatise.

CHAP.

CHAP. V.

Of the Virtues of this Spaw.

I Muſt confeſs the ſubtil and penetrating Spirit, called by *Theophraſtus* his *Arcanum*, and by *Helmont primum ens Salium*, *Spiritus eſuriens*, by *Paracelſus Sal circulatum*, which indeed is his *Albaheſt* or univerſal embrionative Solvent; this Spirit I ſay cannot be extracted out of this water, neither can it ſcarce be found in its pure ſpirituality, but as infolded and lock'd up in the arms of ſome Mineral after coagulation, yet by a skilful Artiſt it may be extracted out of the *totum mixtum* or entire Body of Vitriol, without being any way corroſive at all. And with this Spirit it is, that our *Spaw*

hath its great affinity, and consequently its excellency, penetrating by its tenuity of parts the most secret and secluse parts of our Bodies. This being premised, 'twill be obvious to every ones capacity, to know and acknowledge the great advantages which are acorued, as well for preventing as curing most stubborn and lasting Diseases. However for the better satisfaction, of the Vulgar principally, I shall briefly say something in general, and not omit in particular what autoptical Observations I have made these two or three last Summers by-past. Having in the precedent Chapter expressly demonstrated the manifold Operations of Vitriol, and consequently not a few of this our *Spaw*, my Province now will be of an easie charge, and therefore I will briefly acquaint you, that the first qualities of this water, *quatenus* water, actually

actually moiſtens and cools, but as it is befriended with a Mineral mixture it heats and drys, ſo that it becomes hereby effectually prevalent for the accompliſhing of different indications, and reducing even contrary Diſtempers to their natural tone and conſtitution; Nature her ſelf being more prone to help on, being accompanied with an Aſſiſtant, her own welfare and reſtitution to her beloved enjoyments, than to yield to the aſſaults of a deſtructive Enemy.

The ſecond qualities indeed are ſuch as conquer our greateſt Antagoniſts, and give a total rout to the moſt obſtinate Diſeaſes; for being moſt powerfully diuretical, after they have attenuated, cut, reſolved, and ſo altered the mucous and tartarous humours of the Body, and prepared them for excretion, they then carry them off by urine, which

is the moſt ſafe and effectual conveyance (for all ſharp and ſaline juyces eſpecially) of all other ſorts of evacuation whatſoever. This water alſo thus enriched, ferrets out ſuch latent paſſages and abſtruſe retirements of the Bowels and other parts, as other Medicines cannot reach, and after a diſcovery made, doth not only diſpoſſeſs what is preternatural of its uſurped juriſdiction, but alſo by a corroborative and reinforcive power, intitles Nature to her former right of inheritance, ſo firmly, that ſcarce any other than an act of old age can cut off the intail. 'Tis an eaſie thing for Criticks to raiſe doubts, make objections, and laviſh out there cenſures againſt theſe Encomiums; but that work needs not ſmell of Oyl that anſwers them: Some may ſay, Oh I drunk it ſo long that it ſwell'd me all over, whoſe fault was that?

even

even ſo may the beſt Purgative, not finding a Body duely prepared, either naturally or by Art, fall ſhort of its performance, and in ſtead of relieving, poyſon the Body, ſwell it, and often times break out (an accidental good turn) into Scabs, and other ſordid impurities of the skin. For preventing of this, and the like inconveniences, I ſhall give directions in the enſuing Chapter. In the interim I will ſet down ſuch Diſeaſes as it both prevents and cures, as *Apoplexy*, *Epilpſie*, *Carus*, *Vertigo*, *Cephalalgia*, and *Cephalæa*, but this only if they be ſymptomatical and depend upon the diſaffections of the Stomach, Hypochonders, Womb, or other Bowels, as moſt of them do. It is good againſt Diſeaſes of the Nerves, as *Convulſions*, *Cramps*, *Scorbutick Palſie*, *&c.* eſpecially if they proceed, as generally they do, from Sal-nitrous vellicating and twitching

twitching humours. It specifically respects the Stomach, because there the water partakes both of its grosser and more spiritualized particles, dissolves all crudities, the true original of all obstructions, restores a decayed, and advanceth a present Appetite to meat, and by that means begets much more acquaintance with the Kitchin than the Buttery; it openeth and strengtheneth the Lungs, and consequently is good against *Asthma's* and difficulty of breathing, provided they be not consumptive that drink it. The like it doth to the Liver, Spleen, Mesentery, and *Pancreas*, dispersing thereupon all Hypocondriacal Winds and Melancholy Vapours, which are now become our Epidemical Disease; as also the Palpitation of the Heart, being ordinarily a result from the aforesaid flatulencies and winds. It helps the *Dropsie*, *Black* and *Yellow*

Jaun-

Jaundice, *Rickets*, and *Scurvy*, by being briskly operative, purging and purifying the Blood by urine. It cures the *Gonorrhea*, *Diarrhea*, *Diſenteria*, and ſuch like Fluxes of the *Abdomen*. It openeth the ſuppreſſion of Urin, and carries off the conjunct cauſe thereof, allays its ſharpneſs, and expells ſuch gravel and ſtones, as either the Ureters or *Uretra* can diſcharge; and when any Exuleration happens in the paſſage of Urine, cauſing piſſing of blood, it conſolidates and heals it perfectly. It is exceeding good againſt moſt of the Diſtempers of the Womb, ſuppreſſing all overflowings thereof, as well the white as the red, procures the menſtruous purgations; and by its tenuity of parts, and penetrating Faculty, cures the *Chloroſis* or *Green-ſickneſs*, and conſequently changeth that chachectical colour in the habit of the body into

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into a florid and roſie complection; It helpeth much the *Mother*, makes often the barren fruitful; and in divers caſes may ſucceſsfully be uſed by way of inſeſſion or injection, for then it acts more immediately upon the parts affected. It is good for ſuch as bleed often, and whoever are troubled with a pricking and itching in the skin, with certain lumps ariſing thence, it infallibly remedies them by urine and inſenſible tranſpiration alſo, in caſe you exerciſe whilſt you drink it, *ad rubórem* only, not *ad ſudórem*, 'till you be prety warm but not ſweat; and this I have often experienced. If you drop it into the Eyes, it quells their inflammation and ſtrengthens the ſight. Moreover it is peculiarly good for all Wounds, Ulcers, Itch, Sores, and Scabs, being both drank and outwardly applied, in ſo much as I have known divers inveterate and

malign Ulcers in the Legs and elſe-where cured, nay even the *Kings Evil* it ſelf much relieved thereby.

Briefly, I know no Diſtemper in the Body, which depends on obſtructions or acid ſharp griping humours, but it much helps it, and which is moſt praiſe-worthy it ſtrengthens the parts after the morbifick matter is removed. How far and how ſafely this Water may be uſed by Children, old Men, and Women with child, I ſhall refer you to Dr. *French* and Dr. *Wittie's* Books of the *Spaws*, and others Animadverſions thereon. Only I will ſay briefly, for Children and old Men, that if their temper and conſtitutions be otherwiſe good, they may ſafely drink thereof, proportionably to their vigour and ſtrength of natural heat; but for Women with child, for ſome important reaſons I would adviſe them to forbear.

CHAP.

CHAP. VI.

Directions concerning the rational and methodical use of this Spaw.

'Tis a vulgar and unpardonable errour to drink these waters without a due preparation of the Body, therefore let every one, who expects the true benefit thereof, consult some honest and able Physitian for their instruction, such an one as can judge aright of the age and constitution of the Patient, the nature of the Disease, its motion, and the strength both of the Party and the Medicine. Such an one will surely direct some gentle Vomit, in case the Stomack be foul, and the Patient hath an inclination and be

apt to Vomit; otherwise some Cathartick, such at least as may disburden the *primæ viæ*, and remove such viscous and vitious matter, as may either hinder the waters journey into the parts affected, or that may be carried along therewith into the narrower passages and nobler parts, and there produce stronger and more dangerous obstructions, Dropsies, Tensions, Gripings, &c. yet if any Purgation in general may be recommended, I dare prefer the use of chewing Rubarb before any other, or in case this disgust, then those delicious hydragogical Tablets, which are to be had at Mr. *Dobs* an Apothecary of *Durham*, together with the true Dose and manner of using the same. The Body thus prepared, let him drink cheerfully about three half pint glasses at a time, more or less, as his Stomach can bear it, then exer-

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eise according to strength for a quarter of an hour or thereabout, avoiding all such exercise as may cause them to sweat, for by sweating the water may be drawn into the habit of the body, and produce that Dropsie called *Anasarca*; whilst he walks or rides, *&c.* he must eat some Orange Chips, Caraway Confects, Citron or Limon Pills, or chiefly Elicampane Roots candied, for these comfort the Stomach, promote the waters passage, and make its operation more effectual, when he finds his Stomach somewhat emptied, then three or four more glasses, exercising as formerly, and so on 'till he hath taken his full Dose, which will be when his Stomach cannot conveniently receive any more without vomiting, oppression, and nauseating the same. Next day he may advance to one, two, or three glasses more than he took

took the first day, and so every day more, 'till he arrive unto a pottle or three quarts; more or less, according as his Disease requires, and his Stomach can pass it off, and then stand at that quantity 'till he thinks of giving it over, and then, as he encreased daily at the beginning, so must he decrease and lessen his Dose, 'till he come to the same quantity he began withall. The time of continuing its drinking must be proportion'd to the nature of the Disease, for some two weeks, some three, others a month or more, may be necessary, during all which time, 'twill be requisite to take something to keep your Body soluble. If any one, by reason of his weakness, can neither exercise nor come to the *Spaw*, let him drink it in bed, the natural warmth thereof compensates the benefit receiv'd by exercise. Now, though

this water may of it self in some good measure help most Diseases, yet can it not be thought, but for rendering it more successful in some particular cases, 'twill be convenient to take such other things often times as the Disease specifically requires, and these may be intermixed with the first two or three glasses, *v. g.* some Steel-wine, or other Preparations thereof, in case of great obstructions or other Diseases of the Liver, but then no more water for about half an hour after; may I altogether admit of Sugar, or some opening Syrup, in the first glass, it being thereby the better accelerated to the Liver, as also a glass of White or Rhenish-wine mixed with three or four glasses of the water, or some drops of Spirit of Salt or Vitriol, or Crystals of Tartar, so that the Crystals be made of Tartar and not of Al-

lum, as ſome do, for having with leſs labour the greater quantity of Cryſtals. All theſe I ſay, and ſuch like, being piercing and attenuating, make way for the ſpeedy and free conveyance of the water, and of themſelves contribute much to ſome Cures.

After you have drunk all you intend, you muſt then neceſſarily uſe ſome hydragogical Medicine, or ſuch as evacuateth wateriſh humours, which for the moſt part remain in the abſtruſe crannies of the Body, as likewiſe ſuch things as cool and moiſten the Bowels, otherwiſe they may partake too much of the potential virtue of this chalybiate water, being hot and dry, and thence incur the prejudice of Sore Eyes, and other Inflammations, as I my ſelf have experienced. Before you drink the water, every morning, disburden Nature of her ordinary

excrements, either naturally or by Art. Those who have strong digestions may drink half the quantity in the Afternoon, about four or five hours after Dinner, but then they must eat little or nothing at Supper, others had better forbear.

If any one find himself, after due preparation and several tryals, not able to drink the water, without reluctancy and oppression thereupon, let him forbear, and address himself to other Remedies more agreeable to his constitution.

CHAP. VII.

Directions in order to Diet, and time for drinking it.

THE truth is, though a regular Diet be commendable, and of great

great concern at all times, especially when we run any course of Physick for repairing health, yet I approve not so much of being so sceptically scrupulous, as many are, either in directing or observing so precise and narrow compass of Diet. The only great fear is that of excess, the quantity is much more considerable than the quality, and the rather, because the water in most, if not in all, begetteth *appetitum caninum*, a devouring appetite, so as Men are apt to receive more than they can well digest, and thence arise crudities and corruption, instead of concoction and chylification. A temperate Diet both prevents and cures many Diseases, and is the chiefest *medium* we have for a lasting and possibly an everlasting life; hence it is that *Italians* say, *Mi anger molto è mi anger poco*, who desires to eat much must eat little,

foe by eating little he lives long, and consequently eats much.

All things that are of laudable juyce, and of easie digestion, may be admitted; I shall only forbid Meats too much salted, Geese, Eels, Salmon, all sorts of fat, and in fine such things as are found disagreeable to the temper and constitution of the party; but if otherwise Nature takes delight in a Meat, though not at all proper for the Disease, yet is it allowable, and therefore *Hipp. l. 2. Aphorism. 38.* affirmeth, *Paulo pejor sed suavior cibus & potus meliori quidem sed ingrato præferendus.* Sometimes we must permit Meat and Drink, though something worse for the Disease, if otherwise it be grateful. Your Drink also must be suited to your Stomach and temper, cold Stomachs may drink strong Ale or Sack, hotter and stronger Stomachs must be content with smaller Beverage and Wine diluted. 'Tis

'Tis not good to eat any thing 'till the water be moſt, if not all, paſſed thorough your Body, which is known beſt by the colour of your Urin, changing from a pale to a higher tincture. To cloſe all, as to Diet, I adviſe all never to eat ſo much as their appetite may crave, but, as we commonly ſay, to leave off with a ſtomach.

As to the time and ſeaſon of the year, 'tis certainly then beſt (generally ſpeaking) when the weather is hotteſt and dryeſt, which happens moſt commonly in *June*, *July*, and *Auguſt*; though we have by no little coſt and labour, (having the benefit of a declivity) ſo ordered the adjacent parts thereof, that the Rain glides off without ſinking any wiſe conſiderably into the ground, and conſequently it may be drank in rainy weather without any apparent diminution of its virtue. I have ob-

served it before Sun-rise to be inclined to luke-warmness, which after two or three hours of a Solar influence, becomes briskly cold, which alteration is doubtless from the constriction and dilatation of the pores of the earth, locking up or ventilating the fuliginous Vapours, accordingly as the coldness of the night or heat of the Sun disposeth them, and therefore 'tis fittest to drink) it after the Sun hath by its lustre and beams dissipated those Vapours, and enlivened the Mineral Spirits.

What further may be said (in imitation of the Rabbins Revealments by *Elias*) *reservetur in adventum alterius.*

Sit laus Dei Patri, summo Christo dicus,
Spiritui Sancto, tribus honor unus, Amen.

FINIS.